CONNECT THE ISLE



Provide a safe and efficient transportation network to the County by proactively identifying the necessary improvements to offset the impacts of future growth.



TRANSPORTATION CONCERNS

Throughout the *Envisioning the Isle* process the County's transportation network has been a repeated concern. During the first public forum, roads and traffic were high priorities identified by citizen input. During the second public forum transportation was again identified as a significant priority for the County. With this in mind, staff worked with the Hampton Roads Transportation Planning Organization (HRTPO) to develop transportation analyses of both land use options presented in the third public forum. This information was made available for citizens to see how proposed land use recommendations would impact the transportation network. Transportation was again a major point of emphasis in comments during this third input opportunity.

Using the public input and guidance from the Planning Commission, the land use map was finalized. The HRTPO analyzed the land use map again to identify the impacts and potential solutions for the County transportation network. The complete analysis by the HRTPO is included in *Envisioning the Isle* in the appendix.

The state code requires a variety of transportation information be addressed within a locality's Comprehensive Plan. The following chapter provides an overview of the County transportation network and discussion of future actions to improve the network and respond to growth and development within the County. Some recurring concerns which will be addressed in more detail include: the traffic levels in the Carrollton area, the desire for bike and pedestrian facilities, and avoiding additional traffic signals with

COMMENTS FROM THE PUBLIC FORUMS

PUBLIC FORUM 1
WHAT ARE THE BIGGEST ISSUES FACING ISLE OF WIGHT COUNTY?

- "Traffic problems and lack of sufficient infrastructure"
- "Road infrastructure to keep up with development"
- "Develop infrastructure for pedestrian and non-motorized travel"

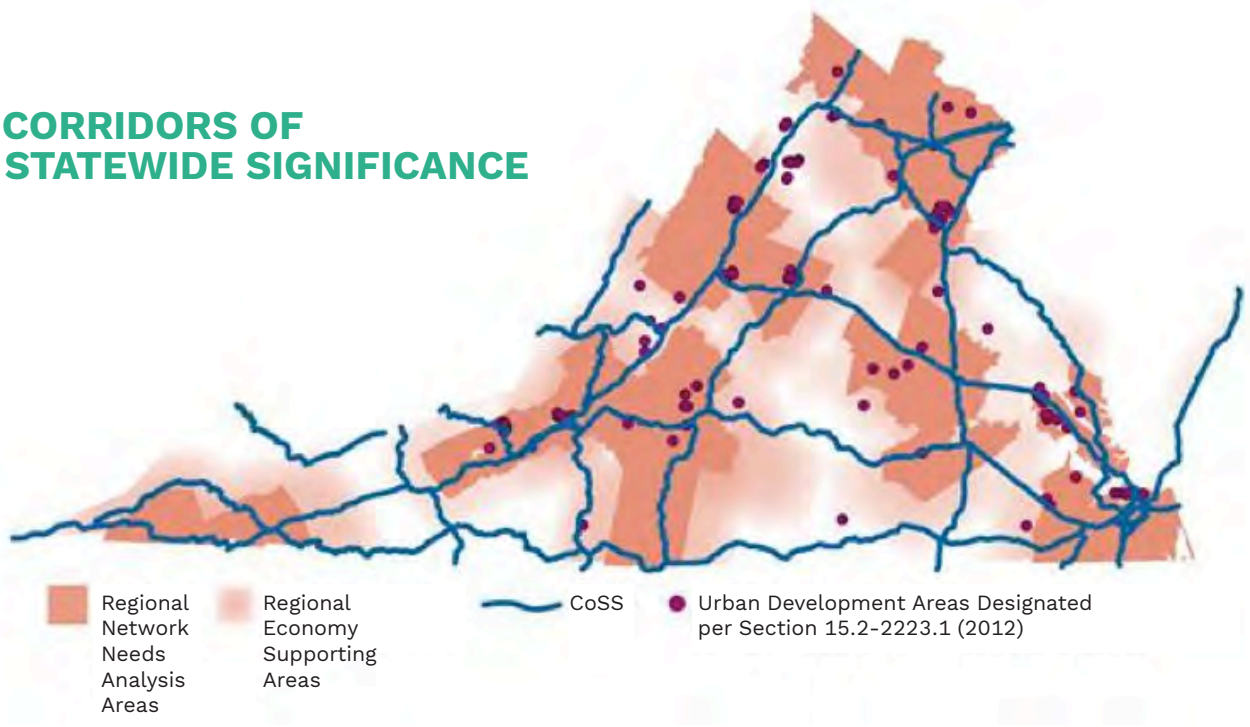
PUBLIC FORUM 2
SCENARIO COMMENTS

- "This scenario is only palatable with an accompanying transportation/roadwork plan"
- "Limit red lights"
- "Need smarter plan for main routes to avoid 8 lanes"

PUBLIC FORUM 3
SCENARIO COMMENTS

- "No additional traffic lights on Rt 10 – Consider roundabouts"
- "More bicycle paths and sidewalks throughout the County"
- "Concerned about pass-through traffic on 17 due to development in Suffolk"

FIG 1 **CORRIDORS OF STATEWIDE SIGNIFICANCE**



alternative intersection options, among others.

Statewide Planning Consistency

The statewide long range multimodal transportation plan, VTrans, is prepared by the Office of Intermodal Planning and Investment (OIPI) and identifies the overarching visions and goals for transportation in Virginia. VTrans also identifies investment priorities and provides direction on strategies and programs for regional and local planning organizations.

VTrans focuses on three levels of need:

1. interregional travel through Corridors of Statewide Significance,
2. intraregional travel through regional networks, and
3. travel in local activity centers through Urban Development Areas (UDA).

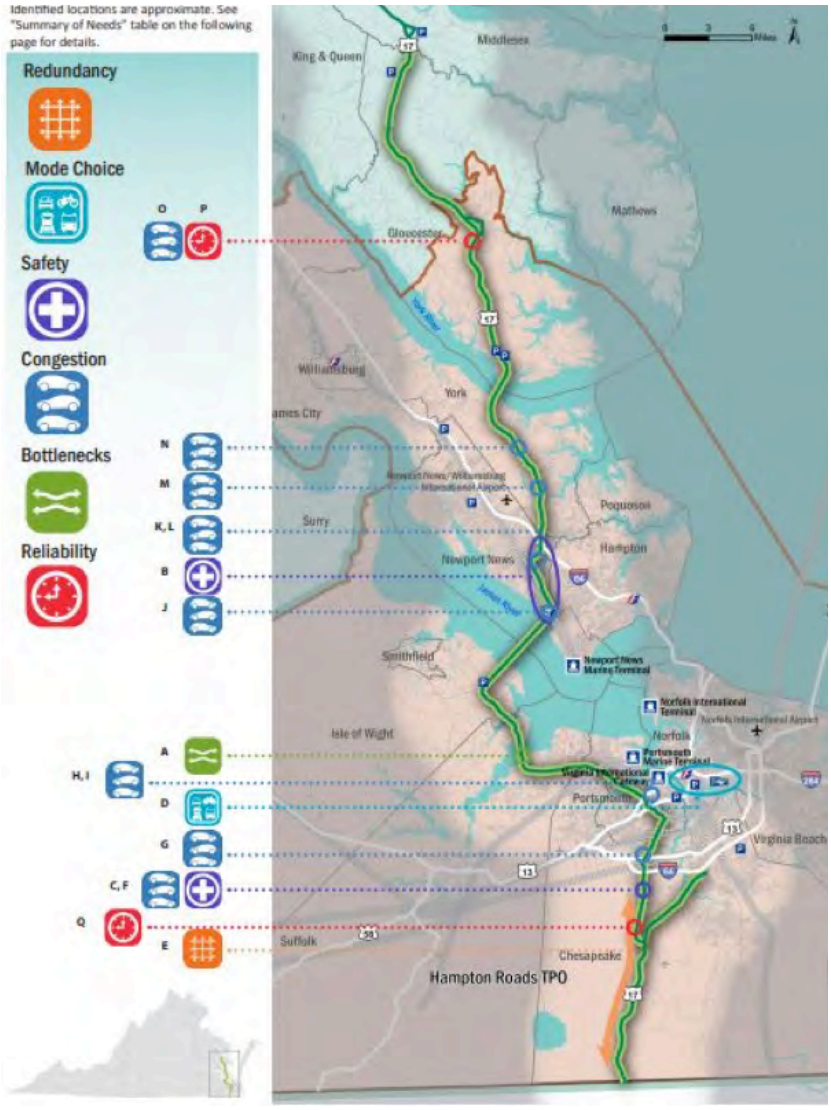
In order to address the first level of need, the VTrans identifies Corridors of Statewide Significance (CoSS) [See Figure 1]. Two of those CoSS run through the County; the "Coastal Corridor" (Route 17) and the "Heartland Corridor" (Route 460). Additionally, a component of the "Southside Corridor" (Business Route 58) is also in the County.

Maintaining efficient traffic flow in these corridors with transportation improvements and focused development will ensure their effectiveness in supporting interregional travel. No specific needs were identified in VTrans for the Coastal Corridor segments [See Figure 2] within the County, however, the Mills Godwin Bridge in Suffolk was identified as a bottleneck due to its two-lane capacity on a four-lane corridor. This condition also applies to the Chuckatuck Bridge between Suffolk and Isle of Wight.

VTrans identified the Heartland Corridor within the County as having a need for redundancy [See Figure 3]. Segments of the corridor which met an identified level of trip demand were identified as needing to have a redundant path option for those trips. This is crucial in the event of emergency situations and as an alternative to reduce congestion on the main corridor.

FIG 2 COASTAL CORRIDOR

SUMMARY OF NEEDS



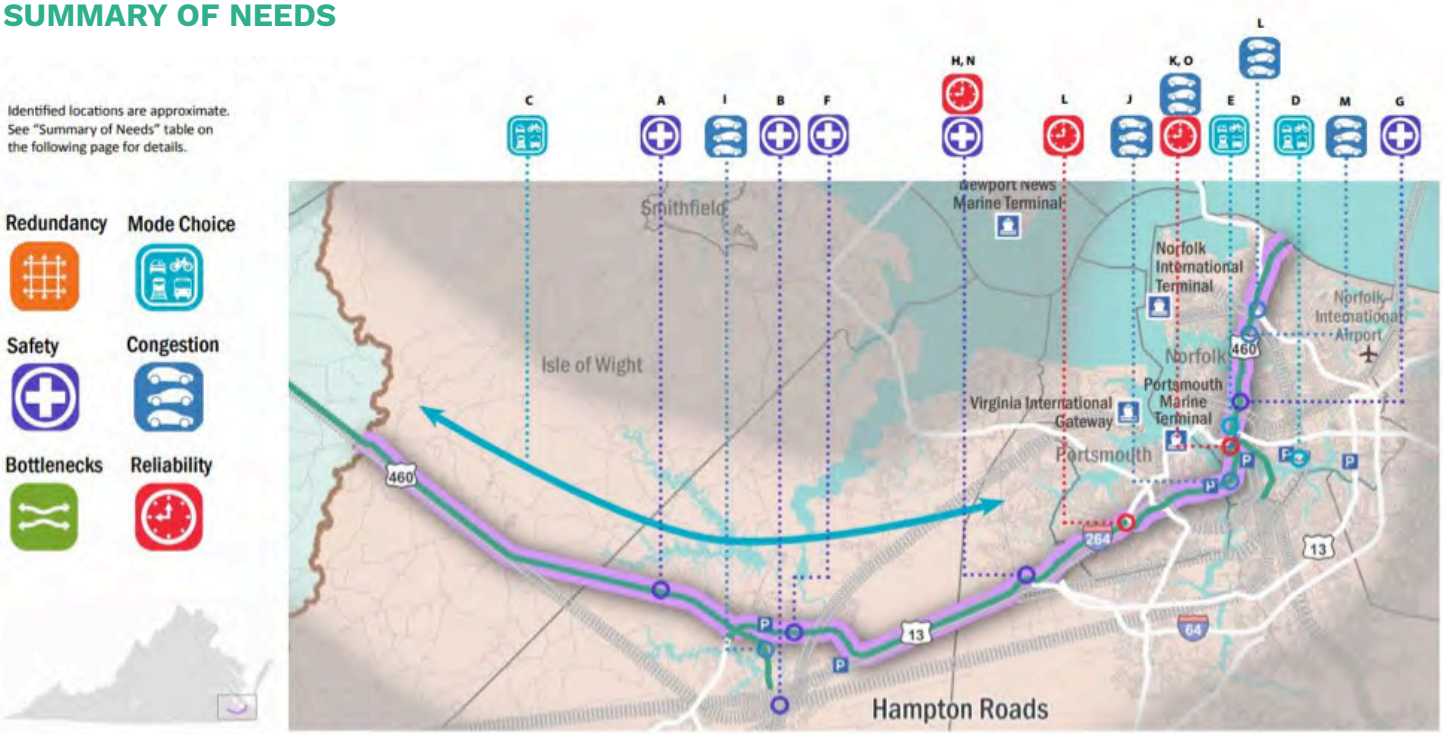
VTrans did not identify any needs on the Southside Corridor within the County.

VTrans addressed the second level of need by identifying regional network as multimodal networks that facilitate intra-regional travel within urbanized areas and focusing on the transportation network needed to support the region's economic competitiveness. There are no regional roadways in the County which had a specific need identified in the VTrans assessment.

Lastly, VTrans deals with the third level of need, Urban Development Areas (UDA). There are three identified UDAs within the County. They are consistent with the County's Development Service Districts. The VTrans

FIG 3 HEARTLAND CORRIDOR

SUMMARY OF NEEDS



assessment of these areas does not identify specific improvements at this time and does note that needs will be determined based on coordination with the locality. The complete transportation study in the appendix and its inclusion in the Comprensive Plan is the first step to identifying transportation solutions to be integrated into the regional transportation planning and funding framework.

Part of the statewide planning framework is the Virginia Six Year Improvement Program (SYIP). The SYIP is developed annually and used by the Commonwealth Transportation Board (CTB) to allocate funding for study, development, or construction of transportation projects. The SYIP includes a full range of projects, from new roadways and road widening, to traffic signals, paving shoulders, and turn lanes. The SYIP also includes bike lanes, sidewalks, rail, and public transit projects. As the name suggests, the SYIP is planned funding for six fiscal years at the state level. Each identified project includes expected dates for engineering, right-of-way acquisition, and construction. Based on the SYIP, the HRTPO develops a similar regional document called the Hampton Roads Transportation Improvement Program (TIP). The TIP is based on both statewide and regional transportation planning efforts and is fiscally constrained. The TIP closely matches the SYIP but may include some projects which were prioritized regionally or funded locally. Smart Scale was created by Virginia House Bill 2 in 2014 as a way to try to ensure that the Commonwealth's limited transportation funding was utilized for the projects with the most critical need. Projects are reviewed on a biennial basis and objectively scored using factors such as congestion mitigation, safety, economic development, and environmental impacts, with the top scoring projects being chosen for inclusion in the SYIP and public funding. The County has had some success, having three Smart Scale projects chosen during the first two cycles of the program. However, it is worth noting that the County may be at a disadvantage in this process due to the weighting factors, which were changed between the first and second Smart Scale reviews. These factors are utilized for the Hampton Roads region in total and explained further in the transportation study in the appendix.

Countywide Transportation Network

When considering transportation in the County, all aspects of the transportation network have to be considered. This includes not only the roads you drive on to and from work. The transportation network includes railroads, airports, bridges, the waterways that connect our region, ports, bike and pedestrian

FIG 4 SYIP AND TIP PROJECTS

SYIP PROJECTS

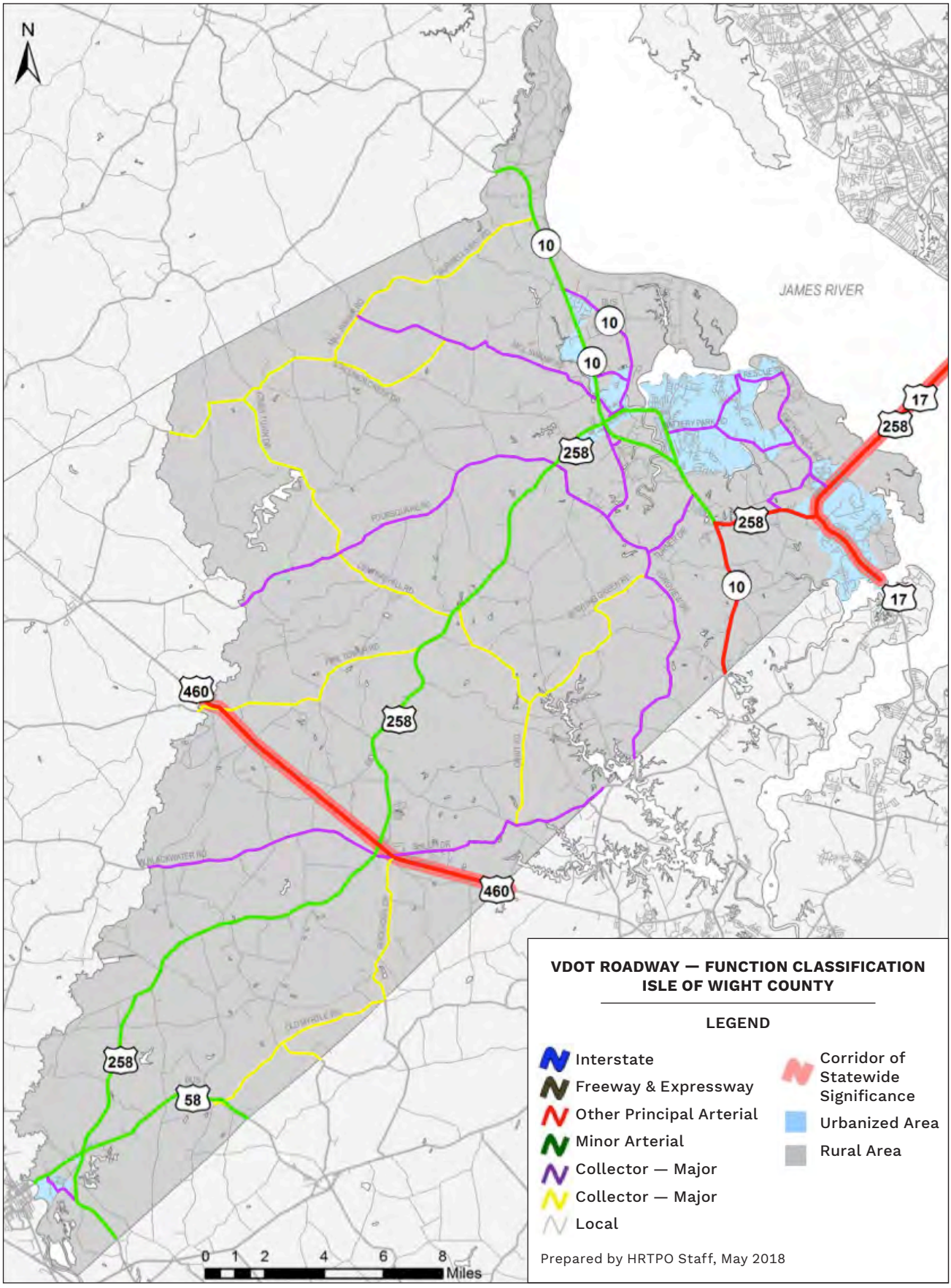
UPC	PROJECT	PROJECTED CONSTRUCTION START	PROJECT COST	ALLOCATED FUNDING
113028	Bridge Replacement — Dews Plantation Road (Rte 683) over Stallings Creek	2022	$ 3,800,000	$ 3,800,000
113027	Bridge Replacement — Ennis Mill Road (Rte 690) over Ennis Pond	2021	$ 2,700,000	$ 2,700,000
113029	Bridge Replacement — Fire Tower Road (Rte 644) over Pope Swamp	2022	$ 4,200,000	$ 4,200,000
113026	Bridge Replacement — Mill Creek Road (Rte 638) over Burnt Mill Swamp	2022	$ 2,700,000	$ 2,700,000
111338	Bridge Rehabilitation — South Church Street (Bus Rte 10) over Cypress Creek	2020	$ 1,600,000	$ 1,600,000
111339	Bridge Replacement — Uzzell Church Road (Rte 692) over Champion Swamp	2021	$ 1,250,000	$ 1,250,000
113600	Install Rumble Stripes — Route 258 between Suffolk and Windsor	2024	$ 352,000	$ 352,000
113200	Install Sidewalk — Church Street/Shiloh Drive from Johnson Avenue to John Henry Street	2020	$ 671,000	$ 609,000
109481	Intersection Improvements — Route 17 at Route 258	2021	$ 6,770,000	$ 6,770,000
103021	Intersection Improvements — Turner Drive at Benns Church Blvd.	Underway	$ 698,000	$ 511,000
109314	New Roadway — Nike Park Road Extension from Reynolds Drive to Route 17	2021	$14,548,000	$11,658,000
102951	Pedestrian Improvements — Main Street in Smithfield	2020	$ 1,106,000	$ 1,106,000
91219	Pedestrian Improvements — Nike Park Trail from Cypress Creek Bridge to Battery Park Road	Underway	$ 850,000	$ 2,738,000
101793	Pedestrian Improvements — Nike Park Trail from South Church Street to Nike Park Road	Underway	$ 1,562,000	$ 775,000
101794	Pedestrian Improvements — Nike Park Trail from Battery Park Road to Nike Park	Underway	$ 4,801,000	$ 3,118,000

facilities, and public transportation. Each aspect of the network supports the others and can negatively impact efficiency if not maintained and planned accordingly. Each aspect will be discussed briefly with more thorough discussion available in the appendix. Because OIPI was in the process of updating VTRANS concurrent with the Comprehensive Plan, new information may be available since the Plan's completion. Staff will coordinate any transportation project actions with VTRANS plans moving forward. For further information on VTRANS you can visit their website at www.vtrans.org.

Roads

Roadways are classified into three types based on their function. Those types are arterials, collectors, and locals. Arterial roadways include interstates, freeways and expressways, and other principal and minor arterials. They provide for mobility, which is the ability for traffic to pass through a defined area in a reasonable amount of time. Local roadways provide more accessibility which is the capability to provide access to and between land use activities within a defined area. Collector roadways, broken down as major and minor collectors, offer a mix between providing mobility and accessibility. Additionally, roadways are classified as urban or rural based on their location as defined by the Census Bureau. The majority of County roadways are classified as rural, with only three areas of the County classified as urban. These include the Smithfield Urban Cluster, portions of the County that are within the Franklin Urban Cluster, and portions of the Route 17 corridor which are within the Hampton Roads Urbanized Area on the Rt. 17 Connector. Figure 5 shows the roadway classifications within the County. A more complete description of roadways and their classifications can be found in the appendix.

FIG 5 ROADWAY CLASSIFICATIONS



Rail

There are two types of rail service in the County's transportation network, passenger and freight. Passenger rail service is offered by Amtrak between Norfolk and Petersburg and runs through the County without station access at this time. Additionally, Amtrak provides passenger rail service in the region from Newport News to Richmond. Both of these services make connections to the Northeast Corridor (along Interstate 95) and provide access to major cities like Washington DC, Baltimore, New York, and Boston.

The second rail type is freight. Norfolk Southern and CSX both provide freight service through the County with access locations within the County. Norfolk Southern operates on both the Route 460 and Route 58 corridors, while CSX operates in the Route 58 corridor only.

Rail service is a vital part of the transportation network, serving to move people and goods efficiently. However, it can also place a strain on other aspects of the network. Increased frequency and length of freight trains increase local delays at at-grade railroad crossings. These delays can effect both local traffic and regional roadway freight movement in locations like the Route 460 corridor. At-grade crossing delays can also negatively impact response times for emergency services and cause additional congestion on evacuation routes. Reducing at-grade crossings and mitigating crossing delays is a key factor in improving transportation efficiency in key freight connectors in the County. Identifying these conflict points and ways to mitigate delays is important to the efficiency of the transportation network.

Bridges

The County has extensive water features which result in a total of 85 roadway bridges in the County. These bridges create critical connections for residents, and their maintenance is vital for an effective transportation network. There are several criteria for evaluating the sufficiency of bridges including age and condition of features such as the decking, endwalls, and lane width. A more detailed explanation of these criteria can be found in the transportation study in the appendix.

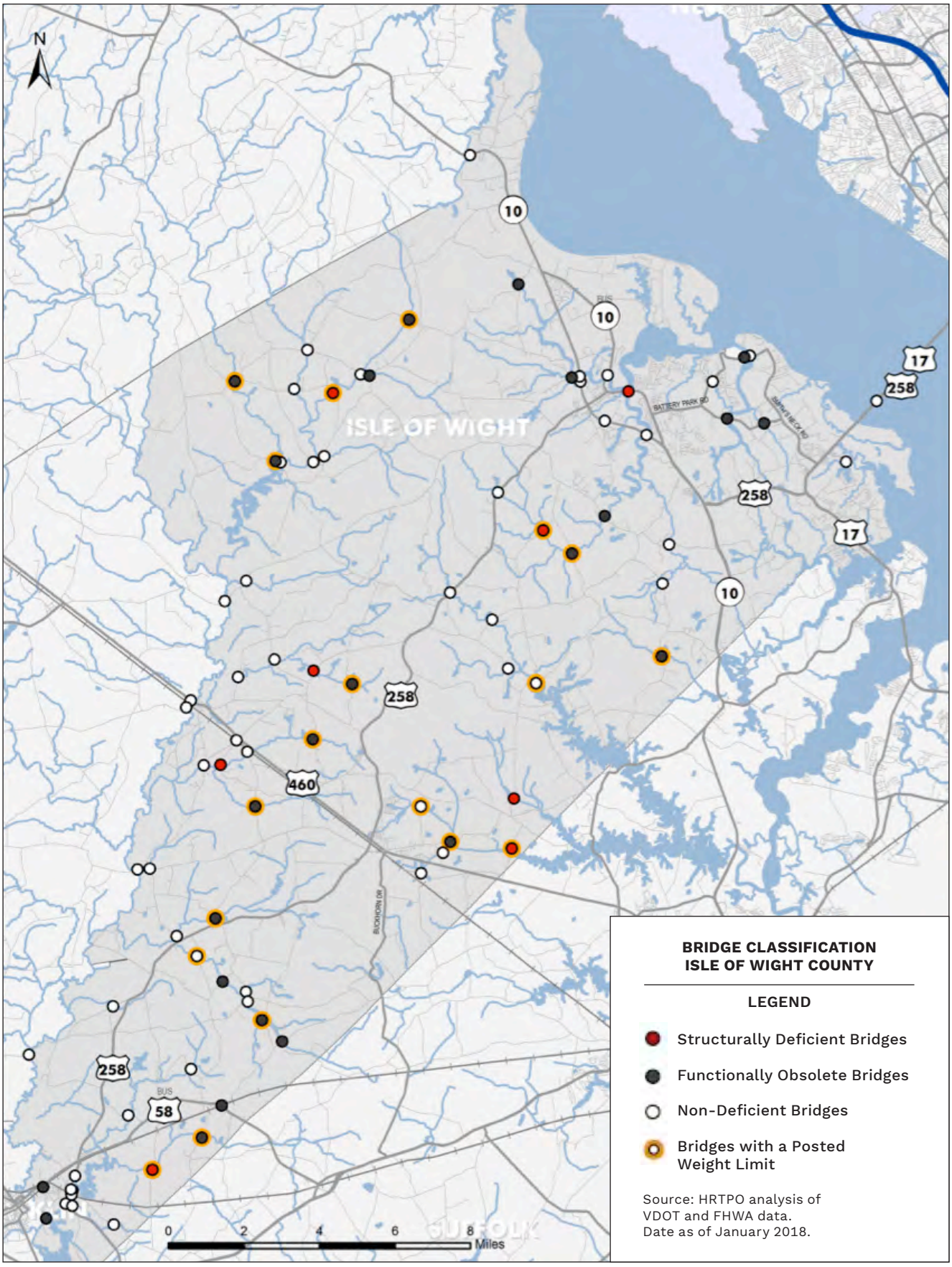
The County has eight bridges which are considered structurally deficient. This means a structural feature of the bridge is in need of monitoring or repair. Being structurally deficient does not mean the bridge is unsafe for daily travel. Unsafe bridges would be closed to public use. However, a structurally deficient bridge may be assessed a weight limit or have other interim modifications made until replacement. The County has 24 functionally obsolete bridges. This includes bridges which do meet current design specifications,

FIG 6 BRIDGE PROJECTS

RECENTLY COMPLETED BRIDGE PROJECTS

FEDERAL BRIDGE #	FACILITY	TYPE	OPENING DATE
29863	Carrsville Highway (Bus Rte 58) over Route 632 & CSX R/R	Replacement	2017
10421	Collosse Road (Rte 641) over Corrowaugh Swamp	Rehabilitation	2017
10414	Jones Town Drive (Rte 637) Bridge over Rattlesnake Swamp	Rehabilitation	2016
10409	Lawrence Drive (Rte 630) over Stream	Rehabilitation	2016
29858	Longview Drive (Rte 602) over Pagan Creek	Replacement	2015
29859	Mill Swamp Road (Rte 621) over Passenger Swamp	Replacement	2016
29856	Orbit Road (Rte 637) over Nuby Run	Replacement	2014
30284	Stallings Creek Rd (Rte 680) over Stallings Creek	Replacement	2016
29488	Whippingham Pkwy (Rte 662) over Ragged Island Creek	Replacement	2017

FIG 7 BRIDGE CONDITIONS



regardless of structural integrity. A map of all bridges and their status can be seen in Figure 7. In an effort to improve bridge conditions, VDOT has rehabilitated or replaced nine bridges since 2014 listed in Figure 6.

Airports

Within the County, the Franklin Municpal-John Beverly Rose Airport is a general aviation airport owned by the City of Franklin. It provides air access for a variety of private aircraft, but does not provide commercial passenger or freight service. It is not a viable option for typical air travel desired by citizens. For standard domestic or international commercial flights County residents can utilize Newport News-Williamsburg International Airport (PHF) or Norfolk International Airport (ORF), which are both readily accessible within the region.

Public Transportation

Currently, the County has two public transportation services, Hampton Roads Transit (HRT) and I-Ride provided by Senior Services of Southeastern Virginia.

HRT Route 064 serves the Carrollton and Smithfield areas of the County. The route receives funding support from the City of Newport News and is

FIG 8 SMITHFIELD/CARROLLTON PUBLIC TRANSPORTATION

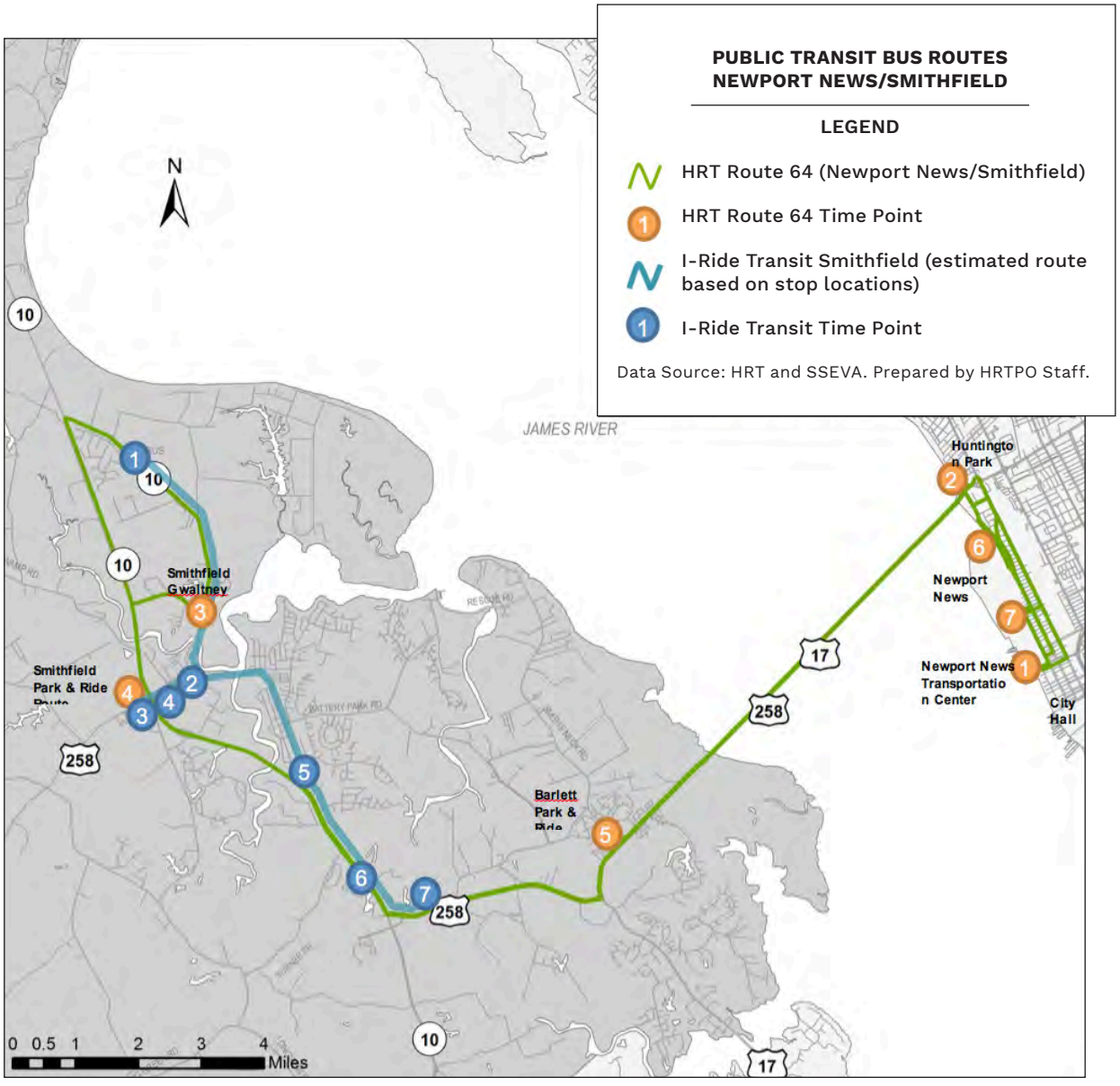
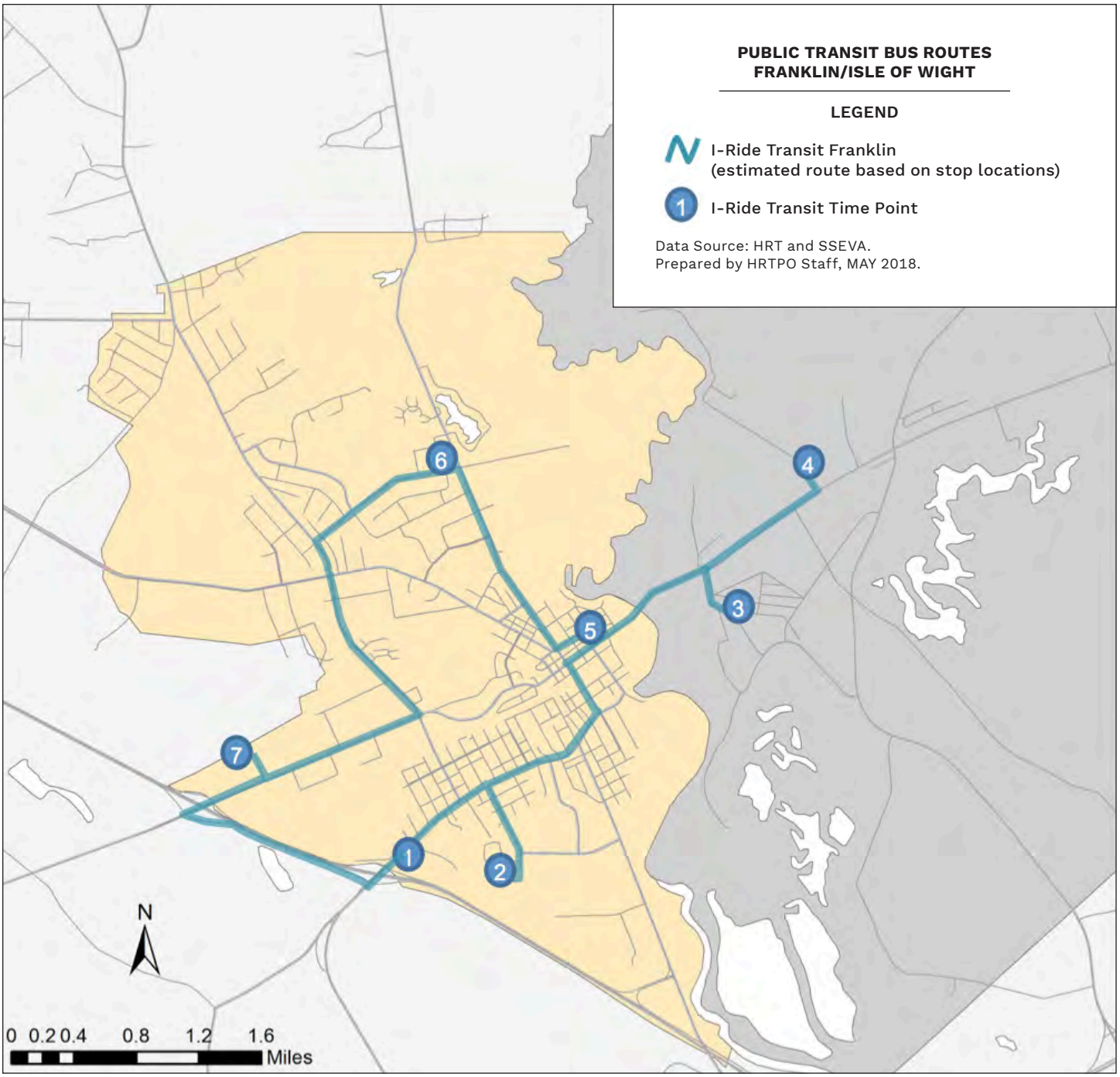


FIG 9 FRANKLIN AREA PUBLIC TRANSPORTATION



intended to serve as an option for the major employers of Newport News Shipbuilding and Smithfield Foods. Those destinations along with local park and ride locations are the only stops on the route [See Figure 8].

I-Ride is intended to be an accessible public transportation option in the region. Senior Services partners with other local organizations which provide transportation as well. I-Ride has fixed routes in the Smithfield and Franklin Areas [See Figure 8 and 9], additionally they provide direct schedule medical and wellness rides specifically for seniors (60+).

The low total population and low population density of the County limit the effectiveness of public transportation. As the County continues to grow and sees increased population density in developed areas such as the Route 17 Corridor, the increased number of potential riders will support more public transportation options in the County.

Because of the County's aging population, public transportation and other mobility options for elderly residents is going to increase in importance. The County needs to work toward strategic expansions of public transit options in DSDs to support this segment of the population. This may include expanding service with HRT or developing new services in partnership with Suffolk Transit to connect residents with key services provided elsewhere in the region. Partnering with Social Services to enhance I-Ride options should also be seen as a key component of serving elderly citizens. Because of Senior Services' focus on this specific segment of the population, expansion of their services in the County provides the most viable option at this time. Partnering with Senior Services to enhance the I-Ride service should be seen as an important key in serving the transportation needs of the elderly. All of these options will have financial implications which will have to be addressed by the County. Additional study of the locations and demands of the elderly population of the County would help to guide these discussions.

Another underserved segment of the population which could benefit from enhanced public transportation is the County's youth population. Providing opportunities to reach employment or after school programs can help enhance these individuals' role in the community and provide them new opportunities to be productive. One option for providing these connections could be partnering with Isle of Wight Schools for an after school activities bus which goes to strategic County locations, thereby, creating opportunities for young individuals after school without significant demand for new equipment and service expansion. The County should have discussions with Schools about how a transportation option of this nature could be created using existing bus and driver infrastructure in conjunction with normal school transportation.

Bike and Pedestrian Facilities

An interconnected bike and pedestrian network of sidewalks, multi-use paths, bike lanes, and other facilities is a critical component of the transportation network. There are many segments of the population who do not have access to a personal vehicle. Being able to safely walk and bike for local trips greatly enhances their everyday life and ability to function in the community. Additionally these facilities provide an important opportunity for recreation and enhance public health.

The County has a Bike and Pedestrian Facilities Master Plan completed by a consultant in 2006 in order to outline the vision and improvements for a pedestrian network in the County. Support for this idea has come from past Comprehensive Plan efforts and was seen again throughout the *Envisioning the Isle* process. Through the County zoning ordinance and other development codes, the County requires construction of sidewalks and multi-use paths with new development. To further support this concept, the Board of Supervisors adopted a policy for the construction of bike and pedestrian facilities and a Design Specifications Manual in 2009.

Implementation of these facilities is an ongoing process which can at times seem ineffective. Because facilities are constructed as part of market driven new development, they are often built in a piecemeal or non-linear fashion. There can be gaps in the network where property has yet to develop or where development existed prior to the requirements for bike and pedestrian facilities. Identifying gaps in the network and making those connections is an important aspect of improving the transportation network in the future.

As part of an ongoing effort to enhance bike and pedestrian facilities in the County, several infrastructure projects have been completed or are in process, including sidewalk improvements on North and South Church Street in Smithfield, sidewalk construction in Windsor along North Court Street and Route 258, ongoing construction of the Nike Park Trail, and Smart Scale funded pedestrian crossings of Route 17 in the Eagle Harbor area of Carrollton.

Continued development of a connected bike and pedestrian network is an important component

of providing access for young citizens who cannot drive and for elderly citizens who may not be able to drive or wish to drive less and are in close proximity to services. It also reduces overall congestion by removing local vehicle trips from the roadway. Review of the zoning ordinance and policy requirements for bike and pedestrian facilities should be performed and consideration of increased requirements to implement these facilities should occur.

Port and Freight

The Port of Virginia (POV) with several terminal locations in Hampton Roads has a major impact on the transportation network in the County. While the Port does not have a terminal in the County, a significant amount of the freight moving to and from the Port for distribution passes through the County. The County also has several businesses based around the import and export of goods and materials through the Port. Freight transport by barge also impacts the James River Bridge, a critical access point to and from the northern end of the County.

Due to the expansion of the Panama Canal and the depth of the POV in relation to other ports on the east coast of the United States, a large increase of freight traffic is expected in our region. In anticipation of this increase, the POV has developed a master plan which identifies projects to support port growth.

Currently 3.7 million tons, a little over 13%, of Port freight, moves through the County utilizing the Route 460 corridor, resulting in thousands of truck trips per day. That volume of freight is expected to double by 2040, resulting in a proportional increase in truck trips along that corridor. While the Route 460 corridor does have the lane capacity to support those trips, an increase of that magnitude poses a variety of impacts to the local Windsor community and the safety of other vehicles traveling along the corridor. Additionally, increased freight traffic on the corridor creates increased safety risks, signal delay, can block access points, and reduces efficiency of the evacuation route.

Waterways

The County has a variety of navigable waters which could present an opportunity to enhance the transportation network. At present there is ferry service between Surry County and Williamsburg which provide an opportunity for travel to the peninsula. There are no other water based services in operation or planned that would serve the County directly at this time. Providing public access points to waterways for recreational use is important to the County. To learn more see the “Serve the Isle” chapter.

Evacuation Routes

The County has several corridors which serve as evacuation routes for the region in the event of hurricanes [See Figure 10]. Through experience with past storm events, some safety and efficiency issues have been identified and continue to garner discussion both locally and regionally. The Route 460 corridor has challenges with moving evacuees due to numerous small towns along the corridor causing local congestion points and the management issues created by single-direction evacuation traffic. Additionally, there are low lying areas on the corridor which are prone to flooding and can block both exit and re-entry routes. The corridor also has vulnerable public utilities immediately adjacent to the corridor which could impede emergency access and travel if they were damaged. These issues have led to the discussions in the past of an alternative Route 460 alignment which would eliminate these problems. That option has been determined to not be viable, but ongoing planning continues to look at improvements to the existing corridor to mitigate some of those issues.

Sea Level Rise and Recurrent Flooding

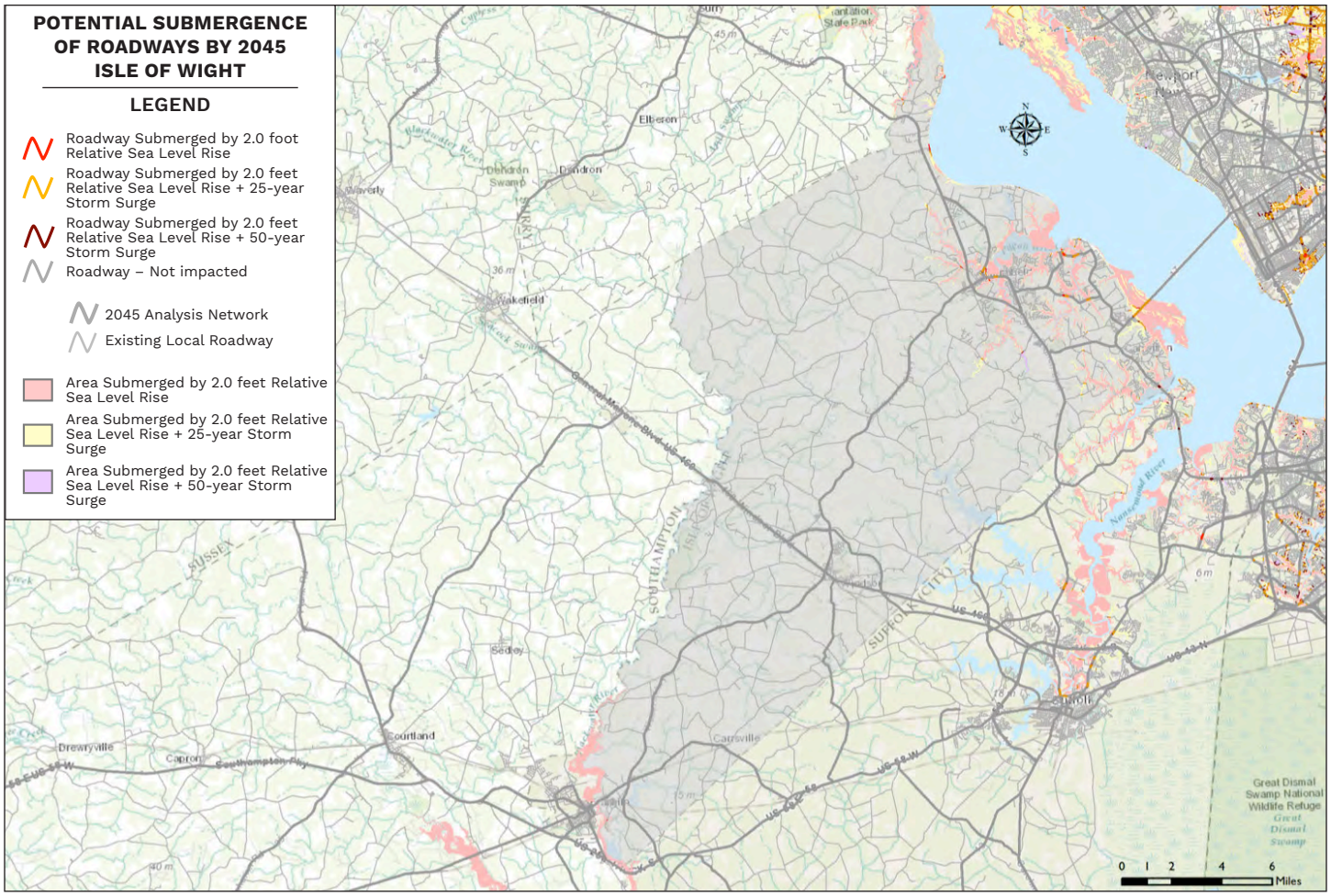
Human-induced climate change is resulting in a variety of environmental impacts including rising sea levels and increased frequency and severity of storms. Hampton Roads, due to its coastal nature and low lying topography, is one of the most affected regions in the country. The County has several roadways which can become flooded under current conditions during storm events, negatively impacting the transportation network. This condition is expected to become more severe in the future.

The HRTPO completed a study which looks at the impacts of sea level rise and recurrent flooding on regional roadways. They modeled two feet of sea-level rise plus two storm conditions in order to identify impacted facilities for improvement [See Figure 11]. In the HRTPO report there are several roadways in the County with the potential to be submerged in future storm events, including: Titus Creek Drive, Rescue Road, Nike Park Road, Church Street, and, most critically, Route 17. Identifying these locations now provides time to study and prioritize improvements which can most cost-effectively prevent future flooding. Roads with very low volumes may remain unimproved if the cost of improvements does not provide adequate public benefit, allowing limited transportation funds to be utilized on more critical projects. As road projects in these locations occur,

FIG 10 EVACUATION ROUTES



FIG 11 SEA LEVEL RISE IMPACTED ROADWAYS



the inclusion of sea level rise mitigation measures should be included in their design.

Traffic/Congestion

A recurring comment throughout the *Envisioning the Isle* process was the concern with increased traffic congestion in the County, particularly on the Route 17 corridor. When considering traffic, we have to identify what are acceptable congestion levels from a local perspective, but also how that compares to regional and statewide standards of congestion, called Level of Service (LOS). Often times the level of congestion considered unacceptable to an individual or rural community may not be considered severe by VDOT standards. A visual example of the VDOT LOS can be seen in Figure 12.

Additionally we have to compare the County's level of traffic congestion with surrounding regional localities. When applying for funding for roadway improvements congestion mitigation is an important factor. If one segment of Route 17 has a lower level of congestion than Suffolk's segment of Route 17, our request for funding will be significantly less competitive.

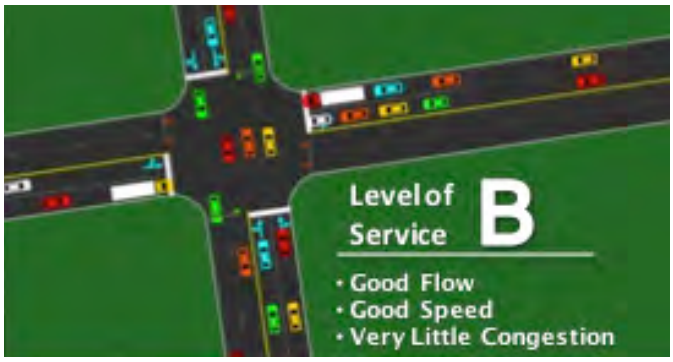
Total roadway volume is also a contributing factor. If the County's segment of Route 17 moves 15,000 vehicles per day at a LOS F and Suffolk's segment of Route 17 moves 30,000 vehicles per day at LOS E, the County project may have a lower public cost/benefit score. Simply put, traffic congestion isn't determined or measured by how many traffic signal cycles one has to sit through. A good visual of this is to look at GPS traffic mapping, such as on Google or Inrix, of the region during peak travel periods [See Figure 13].

As part of the HRTPO study for the County, traffic congestion levels were analyzed using a variety of

FIG 12 LEVEL OF SERVICE DEFINITIONS

"LOW" CONGESTION







"MODERATE" CONGESTION



"SEVERE" CONGESTION

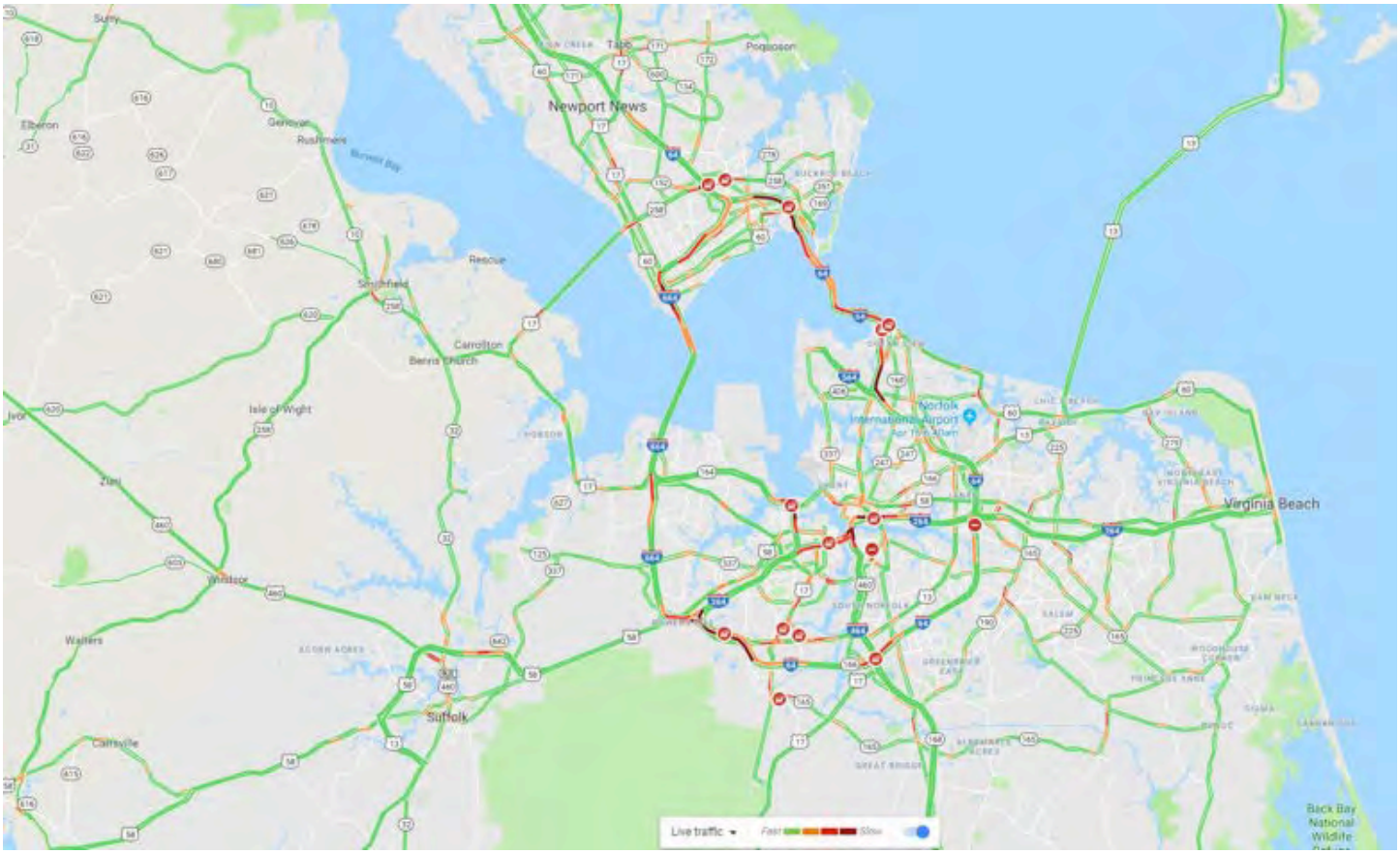




Source: HRTPO Congestion Management Process report

trip data. The analysis looked at both the morning (AM) and evening (PM) peak hours. Based on that analysis, sixteen road segments were found to have moderate or severe levels of congestion currently during the AM and PM peak periods. The affected segments vary from AM to PM, but generally speaking, they are Smithfield, Route 17 near Eagle Harbor, and Windsor around the Church St./Court St./Route 460 intersection. For more detailed information on the locations see the appendix. The HRTPO Study also looked at projected traffic volumes in the final land use scenario and identified roadway segments with congestion issues. The study identifies projects [See Figure 14] to alleviate the congestion issues identified. With inclusion in *Envisioning the Isle*, these projects can now be proposed for inclusion in

FIG 13 REGIONAL CONGESTION



regional transportation plans and submitted for state and federal funding. Many of the projects involve significant cost and major improvements such as adding lanes. Identifying smaller, more achievable projects, such as small intersection improvements, which can make small steps in the interim, will be an important ongoing task.

Traffic congestion on the Route 17 corridor can also be created by unique situations specific to the corridor's regional role. A specific limitation to the Route 17 corridor is the James River Bridge (JRB). Bridge openings to allow ships to pass on the James River can create significant congestion. Nautical transportation is given priority over vehicular transportation at conflict points such as the JRB. This can result in bridge openings during the AM or PM peak period. These openings create larger than normal periods of traffic congestion and, due to the higher number of vehicles which build up, can take extended periods of time to dissipate. Previous discussions to prevent openings during these peak hours could be reinvigorated to successfully help prevent these recurrent congestion situations.

A second unique regional condition which impacts this corridor is situational or incident management on other major regional corridors. When Interstate 64 and 664 have issues (e.g. vehicle collisions), Route 17 is suggested as an alternate route via informational signs on the interstate, public radio, and other information sources. Extended issues on these interstates can drive a significant number of additional vehicles to Route 17 increasing the volume of cars on the roadway and the congestion experienced by drivers. A recently approved regional project will expand the Hampton Roads Bridge Tunnel on Interstate 64 and may reduce the frequency of these events due to the increased capacity on that roadway.

Alternative Intersections

Signalized intersections are the single biggest delay in the transportation network, preventing vehicles from moving in the primary direction in order to allow one or two secondary movements to occur. These delays create the congestion that we experience on roadways. Intersections are also a point of significant conflict due to vehicular

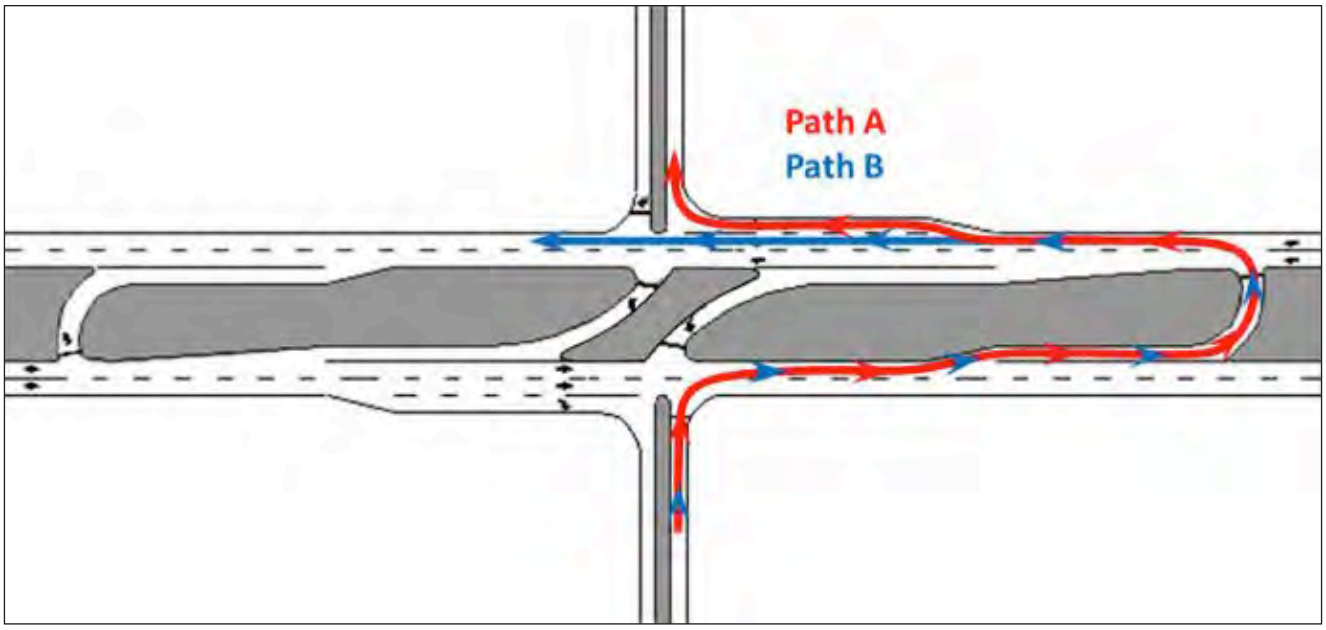
FIG 14 FUTURE PROJECTS

ROADWAY IMPROVEMENTS

FACILITY	APPLICABLE SCENARIO				CANDIDATE PROJECT	INCLUDED IN OTHER STUDIES	PROJECTED PLANNING LEVEL COST ($2018 MILLIONS)	PROJECTED LOS			
	HRTPO 2040 BASE	SCENARIO 1	SCENARIO 2	FINAL LU PLAN				HRTPO 2040 BASE	SCENARIO 1	SCENARIO 2	FINAL LU PLAN
Battery Park Rd from S. Church Street to Nike Park Road	X	X	X	X	Widen from 2 to 3 lanes	—	$13.4 – $22.0	SEV	LOW	LOW	LOW
					Widen from 2 to 4 lanes	A	$23.6 – $39.1	LOW	LOW	LOW	LOW
Benns Church Blvd from Brewers Neck Blvd to Turner Drive			X	X	Widen from 4 to 6 lanes	—	$23.0 – $37.2	LOW	LOW	LOW	LOW
Benns Church Blvd from Turner Drive to South Church Street		X	X	X	Widen from 4 to 6 lanes	—	$22.1 – $35.8	LOW	LOW	LOW	LOW
Carrollton Blvd (Route 17) at the Chuckatuck Bridge	X	X	X	X	Widen bridge from 2 to 4 lanes	B, C	$27.2 – $39.9	LOW	LOW	LOW	LOW
Carrollton Blvd (Route 17) from Route 258 to the James River Bridge	X	X	X	X	Widen from 4 to 6 lanes	A, C	$52.9 – $85.7	LOW	LOW	LOW	LOW
					Improve to Superstreet standards	—	$26.2 – $28.7	MOD	SEV	SEV	SEV
Nike Park Road from Battery Park Road to Titus Creek Drive	X	X	X	X	Widen from 2 to 3 lanes	—	$15.6 – $25.7	LOW	LOW	LOW	LOW
					Widen from 2 to 4 lanes	A	$27.5 – $45.5	LOW	LOW	LOW	LOW
Nike Park Road Extension from Reynolds Drive to Route 17	X	X	X	X	Widen from 2 to 4 lanes	A	$12.6 – $21.6	LOW	LOW	LOW	LOW
Route 10 Bypass from South Church Street to Main Street	X	X	X	X	Widen from 2 to 4 lanes	—	$29.0 – $49.7	LOW	LOW	LOW	LOW
Route 258 from River Run Trail to Route 460	X	X	X	X	Widen from 2 to 3 lanes	—	$52.8 – $70.1	LOW	MOD	MOD	MOD
					Widen from 2 to 4 lanes	B	$75.2 – $99.4	LOW	LOW	LOW	LOW
Route 258 from Scotts Factory Road to WCL Smithfield	X				Widen from 2 to 3 lanes	—	$9.2 – $12.2	MOD	MOD	MOD	MOD
					Widen from 2 to 4 lanes	—	$13.0 – $17.2	LOW	LOW	LOW	LOW

A–Brewers Neck Corridor Study B–Countywide Transportation Plan C–Route 17 Corridor Master Plan

FIG 15 ALTERNATIVE INTERSECTION



paths crossing, resulting in collisions. Alternative intersection designs present an opportunity to reduce the amount of time vehicles are stopped and reduce the opportunities for conflict between vehicles. People typically think of roundabouts when alternative intersections are mentioned, but there are a variety of options, including Restricted Crossing U-Turns and Displaced or Channelized Left Turns [See Figure 15], which are seeing increasing usage locally, regionally, and nationally. VDOT has requirements for studying alternative intersections whenever a new signal or intersection is considered and the HRTPO Study also suggests consideration of alternative intersections particularly on the Route 17 corridor. There was some support for considering alternative intersections in the public comments received throughout the *Envisioning the Isle* process. The County should consider alternative intersection options during zoning application processes and study alternatives in locations with moderate or severe levels of congestion. Alternative intersection improvements may be a more cost efficient way to reduce congestion levels without widening roadways, or expanding right-of-way.

Transportation Technology

Technology is causing significant changes to personal transportation. Ride-sharing and autonomous vehicles are radically changing the way people move around. At present, neither of these technological advances has had much impact on the County, but they will undoubtedly have an impact in the future.

Ride-sharing services such as Lyft and Uber allow people to direct-schedule rides which are provided by other citizens for a fee. Ride-sharing services have historically been provided as commercial taxi services. Users contact the provider and direct-schedule transportation services, as needed, for a fee. The use of ride-sharing apps such as Uber and Lyft has modified the traditional model by facilitating easier driver-user connections, widening the pool of transport into the private sector, and lowering costs. While the County is served by drivers from the Hampton Roads region, costs due to the time and distance required to access rural areas can be cost prohibitive and inefficient for travelers. Increased density, particularly in designated DSDs, may improve access and value of these services. This has the opportunity to provide a mobility option for seniors, disabled individuals, and citizens without personal vehicles. However, due to the cost, it is not nearly as accessible as public transportation is to lower income individuals.

Autonomous Vehicles (AVs) are seen as the next evolution of vehicular travel with constant mention of the technology in the news.

AVs have the potential to provide great benefits to the transportation network such as:

- Enhanced safety because coordination between vehicles prevents collisions;
- Reduced congestion because coordination between vehicles allows for greater speeds and coordinated movements;
- Enhanced productivity by allowing passengers to perform other activities since they are not driving; and
- Reduced parking demands due to AVs serving other trips, moving to offsite locations, or "circling."

Along with these benefits comes a variety of questions and potential problems which will have to be addressed, such as:

- What is the cost impact of AVs technology and does it result in a slow adoption of the technology?
- How does the current road network facilitate passenger drop-offs at trip destinations?
- What happens when AVs come to roadways without clear markings or older sub-standard roads?
- How do AVs interact with vehicles which have human drivers during the interim years before AVs reach market saturation?
- Do AVs actually increase overall driving trips and have negative environmental impacts?

The impacts of AVs are still unknown but it is clear the technology is advancing rapidly and will result in transportation impacts within the planning horizon identified by *Envisioning the Isle*. Continued monitoring of AV technology and regular updates to County transportation plans to address the changing technology will help to ensure a smooth adoption of the technology.

Unpaved Roadways

The County has a significant number of unpaved roadways in rural areas. Finding ways to improve these roadways with limited funds has been a challenge for many years. In order to address these roadways, the County performed an unpaved roadways assessment and prioritization report in 2015 and adopted a policy for the paving of rural roads in April 2016. More information can be found in the "Unpaved Roads Program" section of the County Policy Manual or by contacting the County Transportation Manager. The County should perform updates of the assessment every five years or in conjuction with the Countywide Transportation Plan.

Project Prioritization and Development

As the County identifies projects, incorporates them into the regional plans, and advances them for funding and construction, it is important to have flexibility.

Some considerations for having enhanced flexibility and improving the implementation of transportation projects include the following:

- Funding sources can fluctuate resulting in the need to have projects ready on short notice to try and capitalize on extra funding which might become available. Having detailed project scopes with estimates can help advance projects quickly.
- Understanding the sequence of projects is critical to ensuring that connectivity is maintained and enhanced effectively. Building projects out of order may result in reduced benefits and could cause delays to subsequent projects.
- Acquiring Right of Way (ROW) and shared easements which allow for roadways, bike and pedestrian facilities, and utilities during the development process can reduce the time and cost needed to implement transportation projects. If ROW or shared easements are acquired during the zoning and plan development processes, when transportation projects come to fruition the process can be sped up significantly, because the ROW/ easement acquisition process has already occurred. By having these areas dedicated there may be little or no cost to the County which can benefit the transportation project.
- Prioritize transportation projects based on their costs and benefits to the transportation network and not on public and political opinion. Through transportation studies clear understanding of the benefits of projects can be identified. Constructing projects based on these benefits will provide the most improvement to the transportation network. Developing a prioritization tool which focuses on cost/benefit and removes opinion and subjectivity from the process should occur.
- Construction or maintenance of projects should be coordinated across disciplines to ensure effective use of time and funds. If a road

improvement is planned other departments such as Utilities should be consulted during the process so that projects within their purview in the same area can be aligned. A small delay to one project which prevents the need to redo aspects of the second project will ultimately be more cost effective.

Future Projects

The following is a complete list of projects developed through the HRTPO study, as well as past County transportation studies, and a map of their locations within the County. These projects should be moved forward in the appropriate fashion. Some require further study and analysis to develop a solid scope and benefit.



WINDSOR CASTLE PARK BY BOB BARNES

FIG 16 COMPLETE PROJECT LIST — FROM TPO

ROADWAY IMPROVEMENTS

FACILITY	CANDIDATE PROJECT	PROJECTED PLANNING LEVEL COST ($2018 MM)
Battery Park Rd from S Church Street to Nike Park Road	Widen from 2 to 3 lanes	$13.4 – $22.0
	Widen from 2 to 4 lanes	$23.6 – $39.1
Benns Church Blvd from Brewers Neck Blvd to Turner Drive	Widen from 4 to 6 lanes	$23.0 – $37.2
Benns Church Blvd from Turner Drive to South Church Street	Widen from 4 to 6 lanes	$22.1 – $35.8
Carrollton Blvd (Route 17) at the Chuckatuck Bridge	Widen bridge from 2 to 4 lanes	$27.2 – $39.9
Carrollton Blvd (Route 17) from Route 258 to the James River Bridge	Widen from 4 to 6 lanes	$52.9 – $85.7
	Improve to Superstreet standards	$26.2 – $28.7
Nike Park Road from Battery Park Road to Titus Creek Drive	Widen from 2 to 3 lanes	$15.6 – $25.7
	Widen from 2 to 4 lanes	$27.5 – $45.5
Nike Park Road Extension from Reynolds Drive to Route 17	Widen from 2 to 4 lanes	$12.6 – $21.6
Route 10 Bypass from South Church Street to Main Street	Widen from 2 to 4 lanes	$29.0 – $49.7
Route 258 from River Run Trail to Route 460	Widen from 2 to 3 lanes	$52.8 – $70.1
	Widen from 2 to 4 lanes	$75.2 – $99.4
Route 258 from Scotts Factory Road to WCL Smithfield	Widen from 2 to 3 lanes	$ 9.2 – $12.2
	Widen from 2 to 4 lanes	$13.0 – $17.2

SAFETY

FACILITY	CANDIDATE PROJECT	PROJECTED PLANNING LEVEL COST ($2018 MM)
Route 460/Bank Street/Court Street/Church Street Intersection	Intersection Congestion Improv.	$ 1.8
Reynolds Drive/Smiths Neck Road Intersection	Add northbound left-turn bay	$ 2.3 – $ 3.7
	Additional Reynolds Drive signage	$0.002
	Install roundabout	$ 3.1 – $ 6.1
Berry Hill Road/Route 10 Bypass Intersection	Improve intersection lighting	$0.20 – $0.24
Route 258 from Scotts Factory Road to WCL Smithfield	Widen from 2 to 3 lanes	$ 9.2 – $12.2
Route 460 from Route 258 to Bank Street/Court Street/Church Street	Widen from 4 to 5 lanes	$10.0 – $19.4
	Intersection Congestion Improv.	See above

BIKE/PED (SHORT TERM)

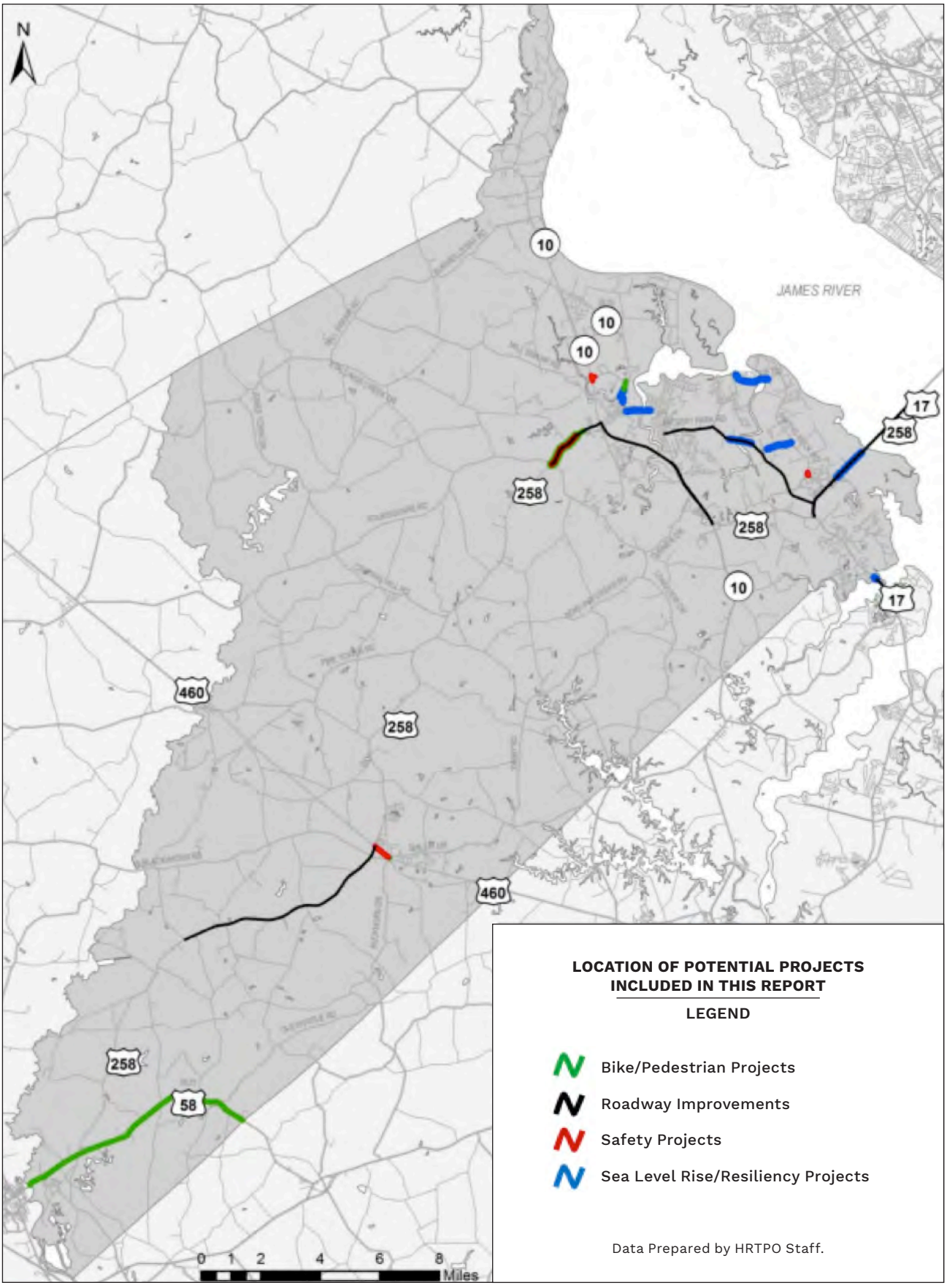
CANDIDATE PROJECT	PROJECTED PLANNING LEVEL COST ($2009)
US 460 & VA 603 & VA 610 Intersection Pedestrian Crossing Improvements	$156,000
Crosswalk Improvements at the packing plants associated with Smithfield Foods Corporation (VA 10 Bus.)	$ 28,000
US 258/West Smithfield Pedestrian and Bicycle Facilities	$607,000
Lake Gaston Pipeline Trail (Phase 1)	$762,000
Signed Bicycle Routes	$ 38,000
Share the Road Signage	$ 8,000
Sidewalks in New Developments:	$312,000 per mile
Bicycle Parking at Commuter Parking Lots	$ 63,000
Mountain Bike Trails and Hiking Trails	$ 45,000 per mile

RESILIENCY

CANDIDATE PROJECT	PROJECTED PLANNING LEVEL COST ($2018 MM)
Raise Roadway - Route 17 west of James River Bridge	$4.8 – $6.2
Raise Roadway - Route 17 near Chuckatuck Creek	$0.3 – $0.4
Raise Roadway - Titus Creek Drive near Jones Creek	$0.3 – $0.4
Raise Roadway - Rescue Road	$1.1 – $1.4
Raise Roadway - Nike Park Road near Jones Creek	$0.4 – $0.5
Raise Roadway - Church Street/Commerce Street near the Pagan River	$1.9 – $2.4

MM–Millions (Projected Planning Level Cost)

FIG 17 PROJECTS MAP — FROM TPO



POLICY	ACTION
Strategically expand public transit options in the more heavily populated areas of the County such as DSDs and the Towns.	Study of the locations and demands of the elderly and low income populations of the County to inform transit decisions.
	Investigate expanding service with HRT or developing new services in partnership with Suffolk Transit to connect residents with key services provided elsewhere in the region.
	Investigate partnering with Social Services to enhance I-Ride options in order to better serve elderly citizens transportation needs.
	Investigate partnering with Isle of Wight Schools on an after school activities bus, creating transportation option and community opportunities for young individuals after school without significant demand for new equipment and service expansion.
Increase the opportunity for safe and efficient pedestrian access within the County.	Review of the zoning ordinance and policy requirements for bike and pedestrian facilities should be performed and consideration of increased requirements to implement these facilities should occur.
	Periodic review and update of the Bike and Pedestrian Master Plan should be performed to ensure proposed facilities align with constructed facilities and development trends.
Identify and advance transportation projects in a manner which makes them competitive regionally and provides flexibility in advancement based on changing funding conditions.	Bring the projects identified within *Envisioning the Isle* to the HRTPO for inclusion in the appropriate regional transportation plans in order to pursue future funding opportunities.
	Develop detailed project scopes with cost estimate in order to advance projects quickly when funding sources fluctuate or extra funding becomes available.
	Identify a sequence of construction for all projects in *Envisioning the Isle* to ensure that projects are constructed in a manner which allows connectivity to be maintained and enhanced effectively, preventing project delays and ensuring maximum cost/benefit.
	Acquire Right of Way (ROW) and shared easements which allow for roadways, bike and pedestrian facilities, and utilities during the development process to reduce the time and cost needed to implement transportation projects
	Use transportation studies to clearly understand the benefits of projects and prioritize transportation projects based on their costs and benefits to the transportation network and not on public and political opinion. Developing a prioritization tool which focuses on cost/benefit and removes opinion and subjectivity from the process should occur.
	Coordinate construction and maintenance projects across County departments, such as transportation and utilities, to ensure projects in the same area can be aligned for schedule and impacts coordinated, ensuring effective use of time and funds.
	The County should require consideration of alternative intersection options during zoning application processes and study alternatives in locations with moderate or severe levels of congestion.

POLICY	ACTION
Monitor and respond to changing conditions and advancing technologies to ensure the transportation plan remains current.	Monitor and update sea level rise impacts as identified by the HRTPO and include sea level rise mitigation measures in the design of projects within those impacted areas.
	Continue monitoring AV technology and regularly update County transportation plans to address the changing technology and ensure a smooth adoption of the technology.
Update existing policies and discussions based on *Envisioning the Isle* and the associated transportation analysis.	Reinvigorate discussions to prevent JRB openings during peak hours to help prevent recurrent congestion situations on Route 17.
	Perform updates of the unpaved roadways assessment on a recurrent basis, such as every 5 years or in conjunction with the Countywide Transportation Plan.
	Update the countywide transportation plan.

PAGE INTENTIONALLY LEFT BLANK